

1 TITLE OF THE INVENTION

2 **Event Program Distribution System and Method**

3 BACKGROUND OF THE INVENTION

4 Field of the Invention

5 The present invention relates generally to video distribution systems,
6 and more specifically to an event program distribution system for
7 distributing a video program from an even-holding place such as concert
8 halls to public users via a communications network such as IP network.

9 Description of the Related Art

10 As disclosed in Japanese Patent Publication 2001-204003, the program
11 of a public event held in a concert hall is distributed through an IP network to
12 users' personal computers and displayed on a small-sized screen. Because of
13 the limited screen size, the user cannot feel and appreciate the real sense of
14 presence in the place of live performance. On the other hand, large screen
15 display systems have been developed and used in relatively small public
16 gathering places such as game centers, movie theaters and "Karaoke" halls
17 (where people gathers for singing favorite songs to the melody of recorded
18 music played by an orchestra). If the event program is distributed to such
19 relatively small public gathering places and displayed on large video screens,
20 the users' impression to the event performance would be much greater than
21 they have with their small-size screen. However, the interest of the event
22 provider is not protected if the program receiving sites are free to access the
23 center of an event program distribution system. Additionally, there are
24 unprofitable times for the relatively small public gathering places described
25 above, depending on days of the week and time of day. It is desirable to
26 enable efficient utilization of the video systems provided in such public
27 gathering places.

28 SUMMARY OF THE INVENTION

29 It is therefore an object of the present invention to provide an event
30 program distribution system and method for enabling distribution of an

1 event program to a number of program receiving sites to be displayed on a
2 video screen whose size is sufficient for viewing by public audience.

3 According to a first aspect of the present invention, there is provide an
4 event program distribution system comprising an event gathering system
5 connected to a network, a plurality of program receiving sites connected to
6 the network for transmitting a request message to the network, each of the
7 receiving sites having a screen whose size is sufficient to be viewed by public
8 audience, and a server connected to the network for receiving the request
9 message and transmitting a blank application form to the network,
10 containing a list of scheduled event programs and their scheduled date and
11 time scale indicating the opening and closing times of day. The program
12 receiving sites are responsive to the blank application form for returning a
13 filled-in application form to the network containing one or more requested
14 event programs. The server responds to the filled-in application form by
15 mapping each of a plurality of requested event programs indicated in the
16 application form in a registration memory to one or more requesting program
17 receiving sites. The server monitors the memory for detecting the date and
18 time scales of each event program, and receives an event program from said
19 event gathering system when the scheduled date and opening time of day of
20 the program are detected and distributes the received event program to one
21 or more program receiving sites which are mapped to the event program
22 until the scheduled closing time of day of the program is detected.

23 According to a second aspect, the present invention provides a method
24 of distributing an event program, comprising the steps of transmitting a
25 request message from a plurality of program receiving sites to a server, each
26 of the program receiving sites having a screen whose size is sufficient for
27 viewing by public audience, receiving, at the server, the request message and
28 transmitting a blank application form to the program receiving sites,
29 containing a list of scheduled event programs and their scheduled date and
30 time scale indicating the opening and closing times of day, transmitting a

1 filled-in application form to the server, containing one or more requested
2 event programs from the program receiving sites in response to the blank
3 application form, responsive to the filled-in application form, mapping each
4 of a plurality of event programs in a registration memory to one or more
5 requesting program receiving sites, and monitoring the memory for detecting
6 the date and opening time of day of each event program and receiving, at the
7 server, an event program from an event gathering site when the date and
8 opening time of day of the program are detected and distributing the
9 received event program to one or more program receiving sites which are
10 mapped to the event program until the closing time of day of the program is
11 detected.

12 BRIEF DESCRIPTION OF THE DRAWINGS

13 The present invention will be described in detail further with reference
14 to the following drawings, in which:

15 Fig. 1 is a block diagram of an event program distribution system of
16 the present invention;

17 Fig. 2 is an illustration of an application form transmitted between a
18 program distribution server and a requesting receive site;

19 Fig. 3 is an illustration of a list of entries for different event programs
20 requested by receiving sites and stored in a database of the server;

21 Fig. 4 is a flowchart of the operation of the server when an application
22 form is transmitted from the server to a requesting receive site in response to
23 a request message from the receive site; and

24 Fig. 5 is a flowchart of the operation of the server when an event
25 program is distributed to requesting receive sites.

26 DETAILED DESCRIPTION

27 Referring to Fig. 1, there is shown a public event distribution system
28 according to the present invention. The system includes an event program
29 distribution site 20, an event-holding site (i.e., large public gathering place) 30
30 where a public performance is being held, and a plurality of program

1 receiving sites (i.e., relatively small public gathering places) 40A, 40B and 40C
2 such as game center, movie theater and Karaoke hall. An IP (internet
3 protocol) network 50 is used to transmit a live event program from the event-
4 holding site 30 to the event program distribution site 20.

5 Program distribution site 20 includes a program distribution server 21,
6 a database 22 for storing registration data received from the program
7 receiving sites 40 and a program storage device 23 for storing, if necessary,
8 the live program transmitted from the even-holding site 30. The received live
9 program may be distributed through the network 50 on a real-time mode or
10 the live program is recorded in the storage device 23 and distributed on a
11 time-shift mode. Program distribution server 21 is managed by a system
12 manager. The server 21 has the functionality of a world-wide-web server to
13 perform subscription and alteration of users and is responsible for the
14 management of a web page on the Internet.

15 Event-holding site 30 is provided with an event-gathering system 31
16 including one or more video cameras and a sound system. The event-
17 gathering system 31 is connected to the IP network 50 via an appropriate
18 interface, not shown, to transmit a composite video signal to the program
19 distribution server 21.

20 Each of the program receiving sites 40 is a subscribed user of the
21 system and includes a client terminal 41 and a big-screen video receiver 42.
22 In each program receiving site 40, or game center 40A for example, the client
23 terminal 41 transmits a request message to the program distribution server 21
24 over the IP network by specifying its URL. The request message contains a
25 password assigned to the subscribed receiving site. If the password is
26 verified by the server 21, a blank application (registration) form is transmitted
27 through the network 50 to the client terminal 41. The video receiver 42 is also
28 connected to the IP network via an appropriate interface, not shown, to
29 receive an event program transmitted from the distribution server 21.

30 As shown in Fig. 2, the application form is displayed on the screen of

1 the client terminal, or personal computer 41 as a window 60. The displayed
2 application form includes blank entries 61, 62 and 63, which the requesting
3 site is requested to insert the name of receiving site, the user ID and a list of
4 requested programs, respectively. A list of scheduled events 64 is displayed
5 to allow the requesting site to select one or more desired event programs and
6 inserts the selected programs to the "requested programs" entry 63. Each
7 entry of the scheduled events includes the name of an event program, the
8 date on which the program is to be performed and the time of day indicating
9 the opening and closing times of day of the program.

10 Once the application form is filled in, the requesting site 40 transmits
11 the application form to the server 21. In response, the program distribution
12 server 21 makes registration of the requesting site 40 by creating a new entry
13 in the database 22 or updates an existing entry of the database 22 with new
14 information (see Fig. 3).

15 During a program application mode of the system, the operation of the
16 program distribution server 21 proceeds according to the flowchart of Fig. 4.
17 When a request message for an application form is received from a
18 subscribed program receiving site 40 (step 71), the server 21 verifies the
19 password contained in the request message. If the password is verified (step
20 72), flow proceeds to step 73 to transmit the application form of Fig. 2 to the
21 requesting site. After the receiving site fills in the application form and
22 transmits it to the network 50, the server 21 receives it at step 74 and updates
23 the database (step 75). As shown in Fig. 3, the database 22 includes a
24 plurality of entries corresponding to a plurality of event programs identified
25 by the names of event program transmitted from program receiving sites 40.
26 In each entry, the name of the event program is mapped to one or more
27 subscribed names of receiving sites which have requested the event program
28 in their application forms and the timing data of the event program.

29 Program distribution server 21 distributes an event program to the
30 program receiving sites 40 which have requested that program. During a

1 program distribution mode of the system, the operation of program
2 distribution server 21 proceeds according to the flowchart of Fig. 5.

3 At step 81, the distribution server 21 reads timing data (date and time
4 of day) from each entry of the database 22 for a comparison between the
5 stored date and the current date and a comparison between the stored
6 opening time of day and the current time of day. If both of these data match
7 in an entry of the database 22 (step 82), flow proceeds to step 83 to read the
8 requesting receive sites 40 from the entry as destination sites and establishes
9 connections through the IP network 50 to the destination sites. At step 84, the
10 server 21 starts transmitting the requested event program to the destination
11 receive sites over the established connections. Meanwhile, the server 21 reads
12 and the closing time of day from the matched entry for comparison with the
13 current time of day (step 85). If they match (step 86), the server 21 terminates
14 the event program distribution by releasing the established connections (step
15 87).

16 The video signal is preferably compressed and/or encrypted at the
17 distribution server 21 and decompressed and/or decrypted at each of the
18 requesting sites. Further, the distribution server 21 may perform a format
19 conversion on a distributed program so that the transmitted program
20 complies with the format of the video receiver of a receiving site.

21 In each of the requesting receive sites 40 where peoples are gathering
22 to enjoy a public event, the video receiver 42 receives the transmitted
23 composite video signal of the event program and displays the video signal on
24 its big-screen screen and drives a number of loudspeakers with the sound
25 signal of the composite video signal. If a live program is used for
26 distribution, the sense of reality of the live performance can be gained. In this
27 way, the existing video systems of relatively small public gathering sites can
28 be fully utilized to gain profit from the distributed programs when these
29 systems remain idle for their normal purposes. This also adds to full
30 utilization of the event program, and represents a new style of commercial

1 activity.

2 If the program receiving site is a game center, it would be best to
3 request those event programs which can be displayed during the times the
4 game center's big-screen facility is not used for its normal commercial service.
5 In a similar manner, a movie theater may request those event programs
6 which can be used on its video projection and sound system during
7 weekdays and times of day when customers are very few to gain sufficient
8 profit. The same applies to "Karaoke" halls.

9 Utilization efficiency of existing video display systems of the relatively
10 small public gathering sites can be improved in this way. Another beneficial
11 effect of the present invention is that there is a possibility for the relatively
12 small public gathering sites to attract new customers of different generations
13 and different sex than the customers who frequently visit the sites for normal
14 commercial services. In a "Karaoke" hall, for example, if a live lecture of a TV
15 personality is displayed on its large screen during the daylight time of
16 weekdays when normal customers are extremely few to visit, its unused
17 facility will be utilized to attract a group of housewives.

18 In a preferred embodiment, the client terminal 41 of a movie theater
19 40B, for example, is provided with a microphone (not shown) and a VoIP
20 protocol to establish a speech path 51 through the network 50 to the event-
21 holding site 30. If the video program of a lecture of a designated person is
22 distributed to the movie theater 40B, a two-way speech communication can
23 be performed between the lecturer and the audience of the receiving site.
24 This allows the audience to submit questions to the lecturer and receive his
25 reply on a real-time basis.

26 In a preferred embodiment, the distribution server 21 may announce
27 scheduled event programs and their contents on its home page. The home
28 page of the server 21 may further includes destination receive sites where the
29 schedule event programs are displayed.

30 In a further preferred embodiment of the present invention, a

1 requesting receive site 40 transmits a request message to the server 21,
2 containing a time interval during which normal commercial activity is low.
3 In response, the distribution server 21 sends a return message containing a
4 list of event programs that can be distributed during the specified time
5 interval. On receiving the return message, the requesting site selects one or
6 more desired programs from those listed in the received message.

7 Event program distribution server 21 may send a billing message to
8 the requesting sites on an event-by-event basis for requesting them to transfer
9 a charged amount to a bank's account specified by the server 21.